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Macwan

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- (54) **PROVIDING A DEDICATED CHANNEL ACCESSIBLE TO A GROUP OF USERS**
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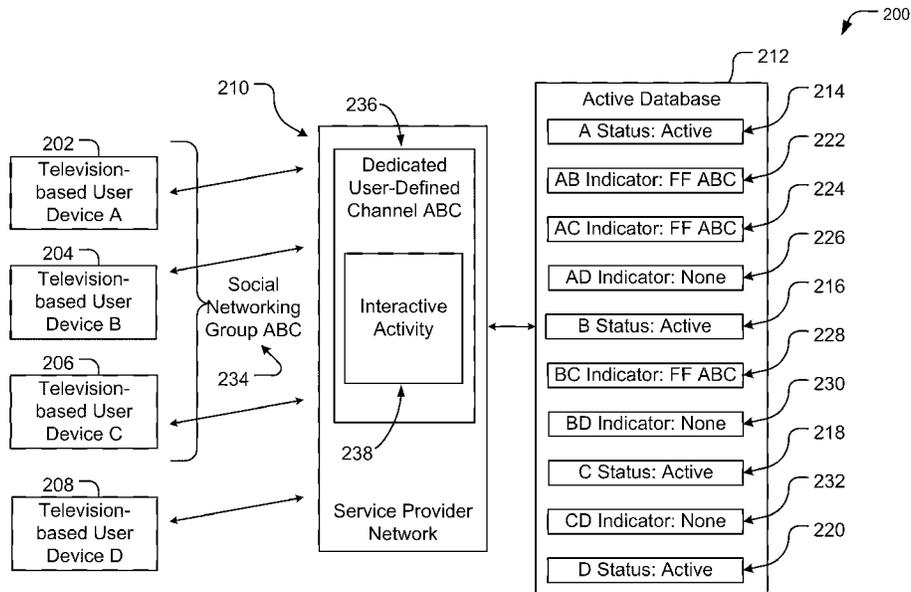
(57) **ABSTRACT**

A system includes a service provider network configured to communicate with a plurality of television-based user devices. The system also includes a database storing a status of user activity with respect to each of the plurality of television-based user devices and storing indicators of user-defined relationships between respective users of the plurality of television-based user devices. The system further includes a dedicated channel accessible to a group of users of the plurality of television-based user devices. The dedicated channel is arranged to enable interactive activity between members of the group.

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20 Claims, 10 Drawing Sheets



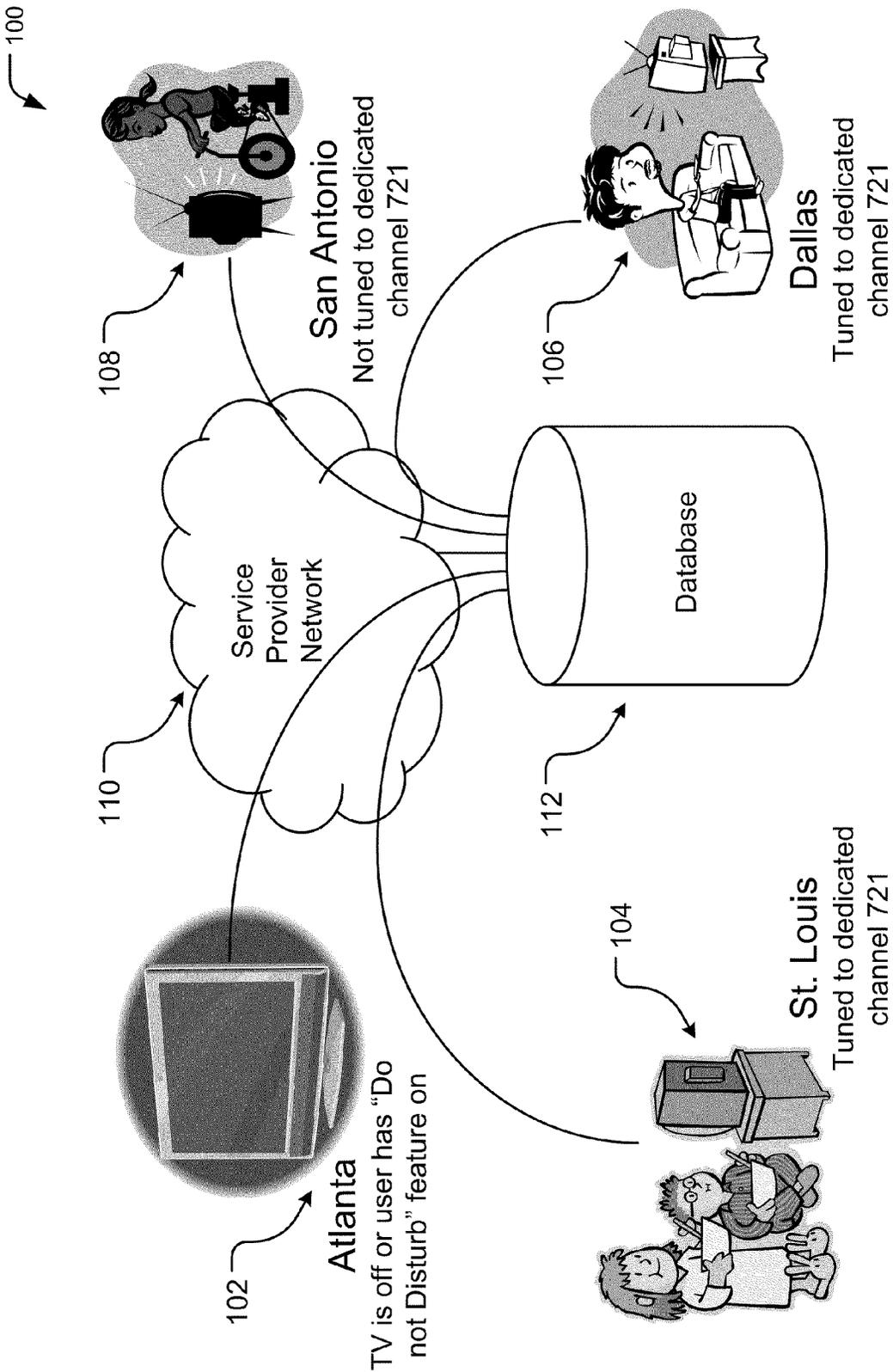


FIG. 1

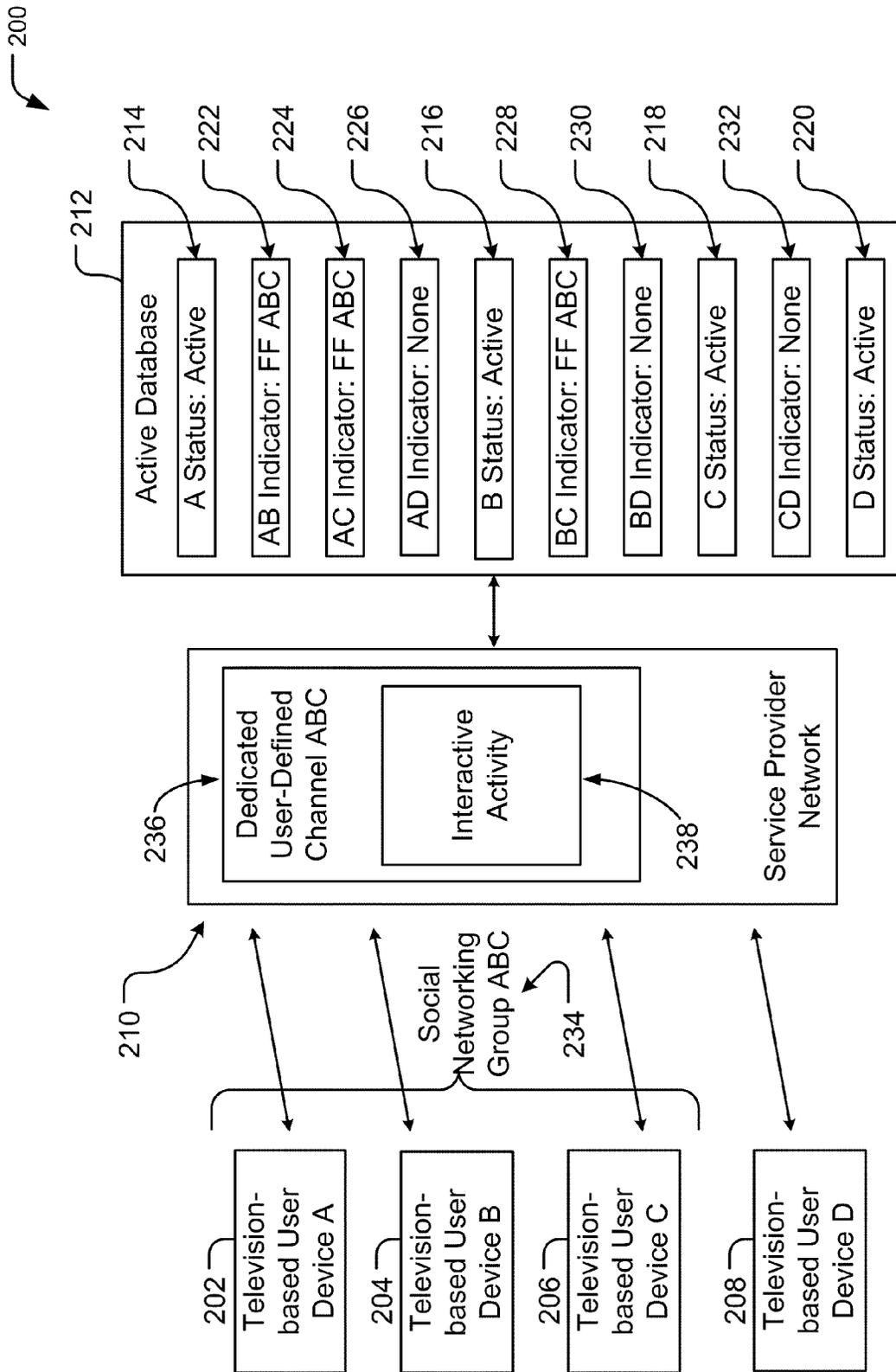


FIG. 2

300

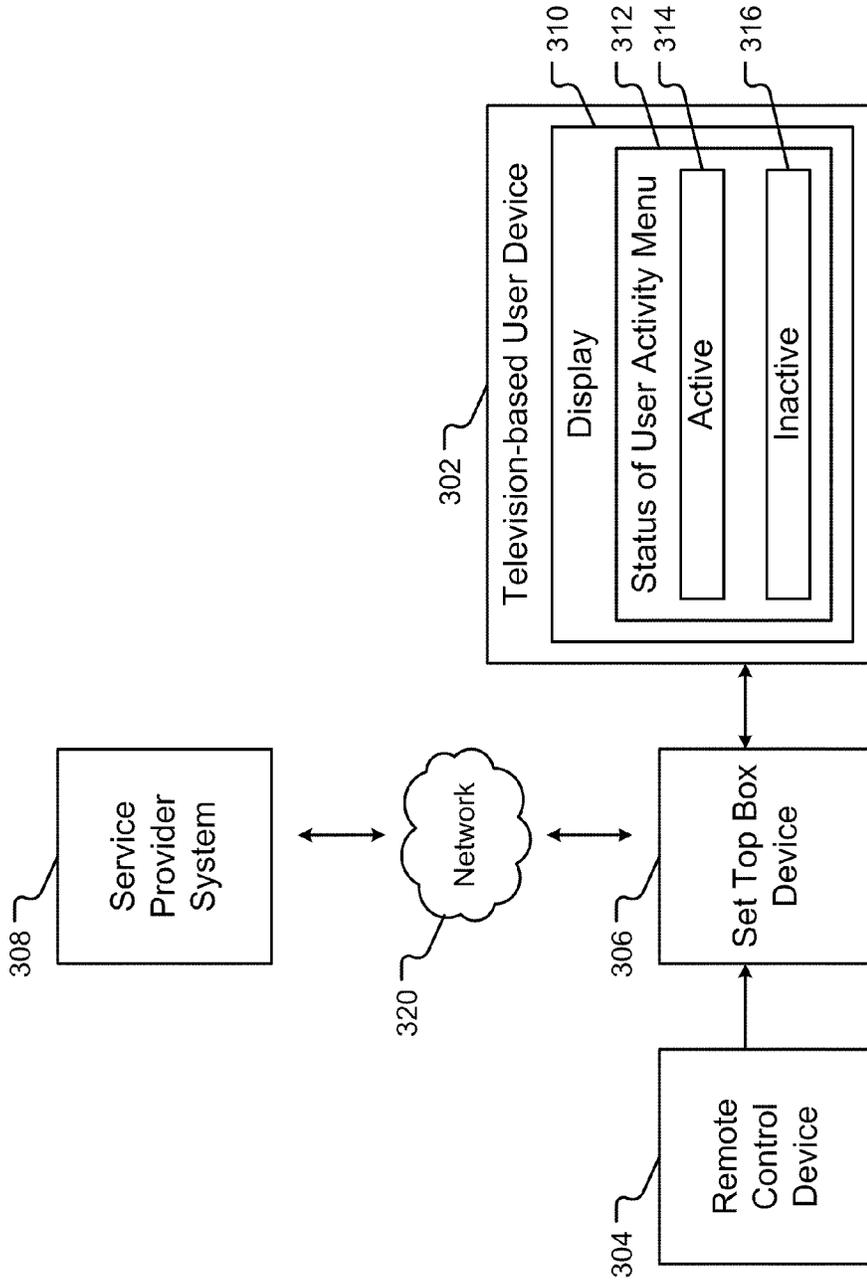


FIG. 3

400

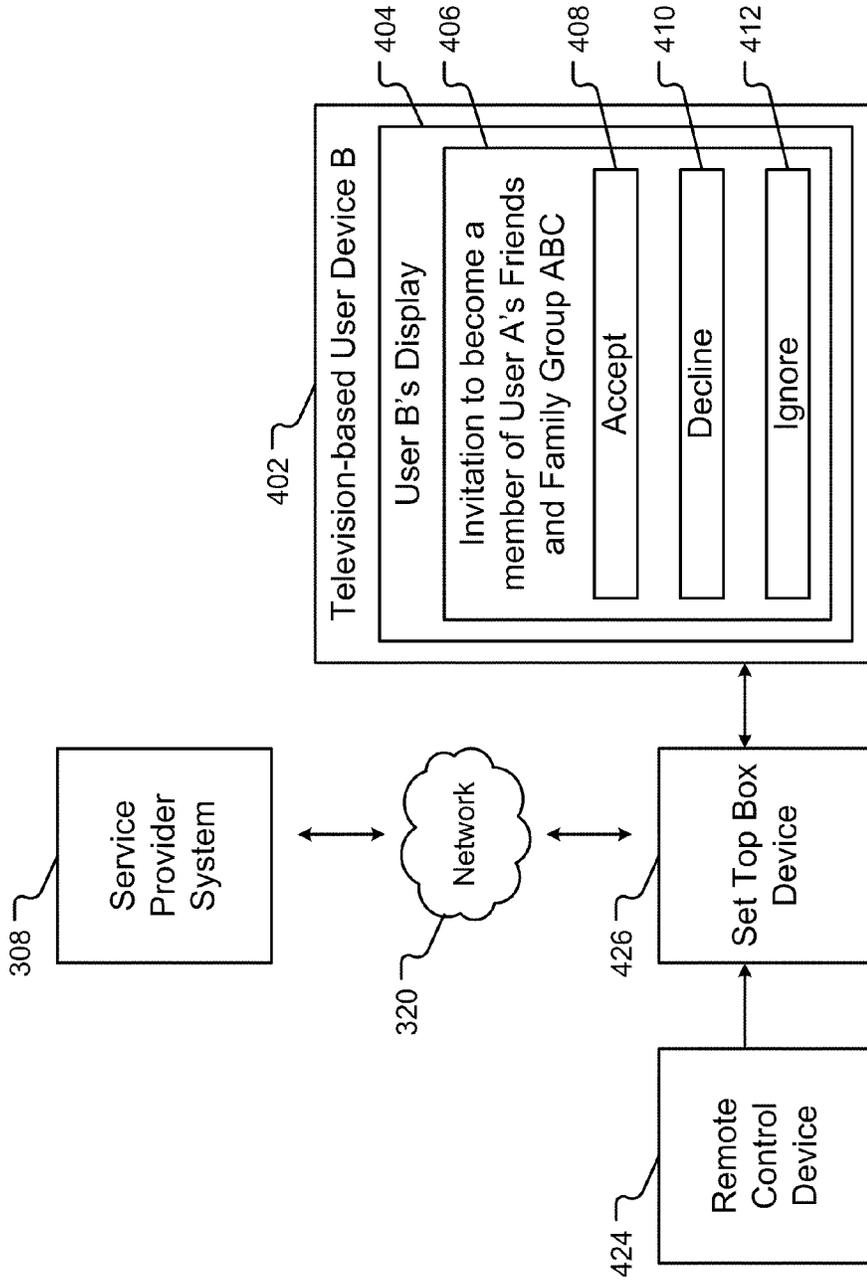


FIG. 4

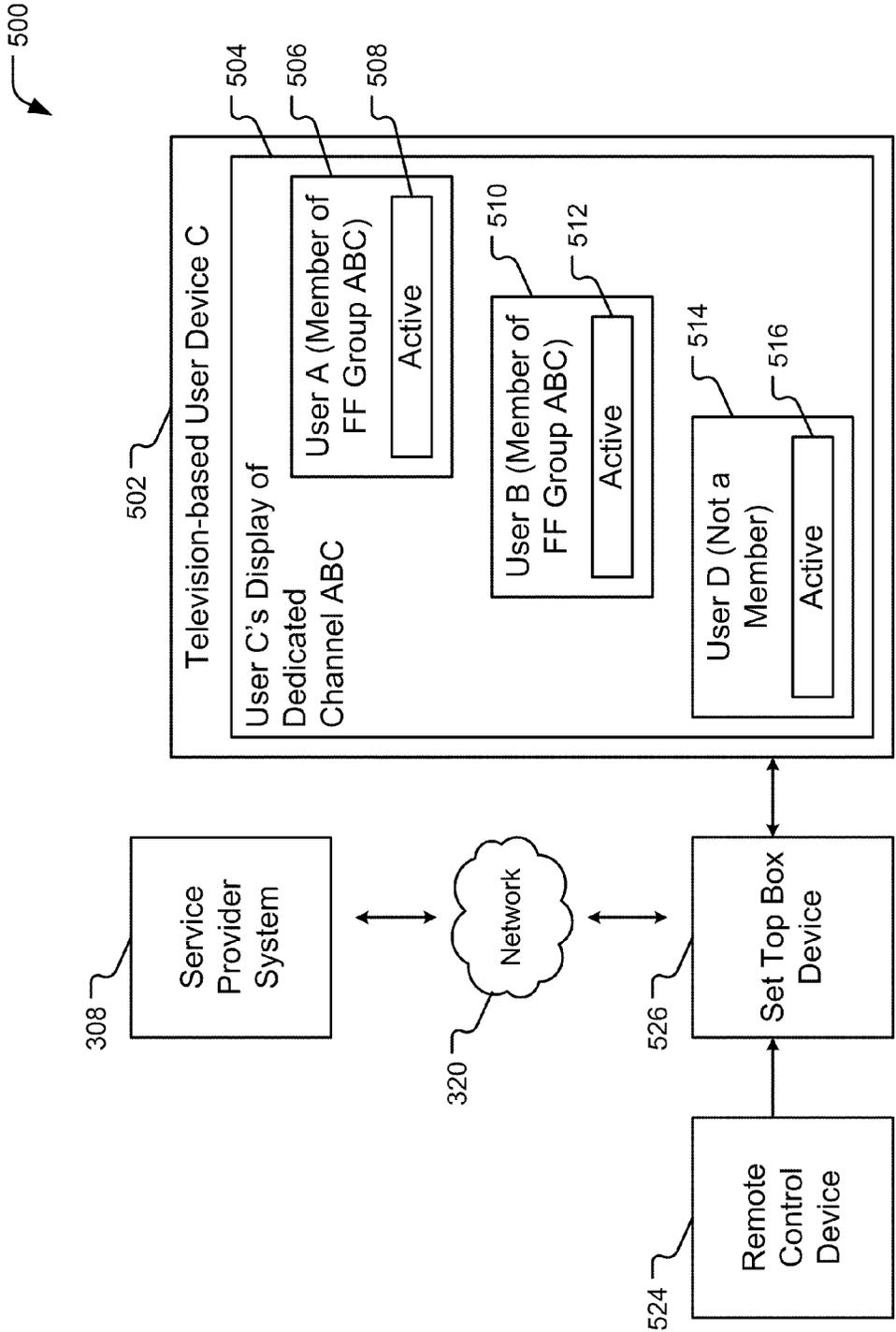


FIG. 5

600

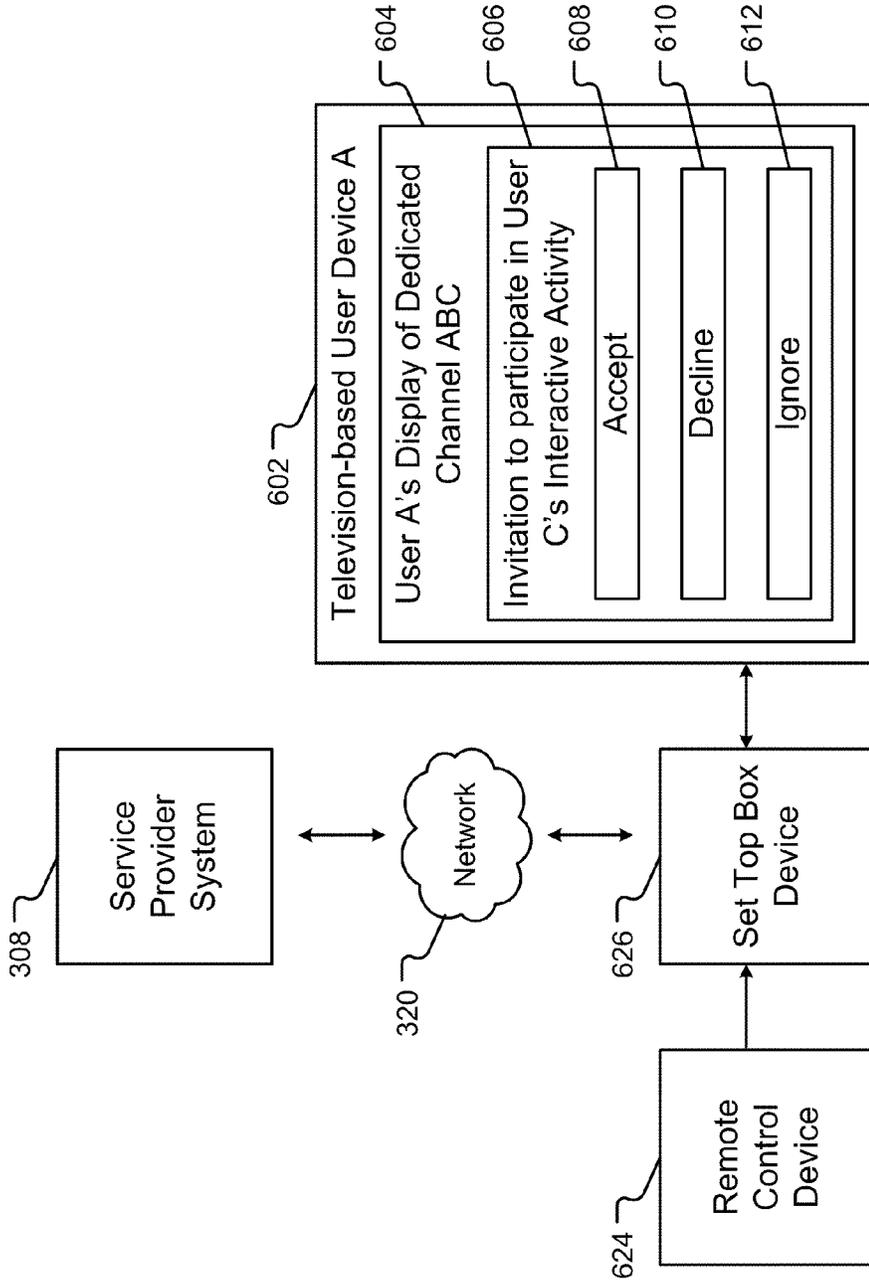


FIG. 6

700

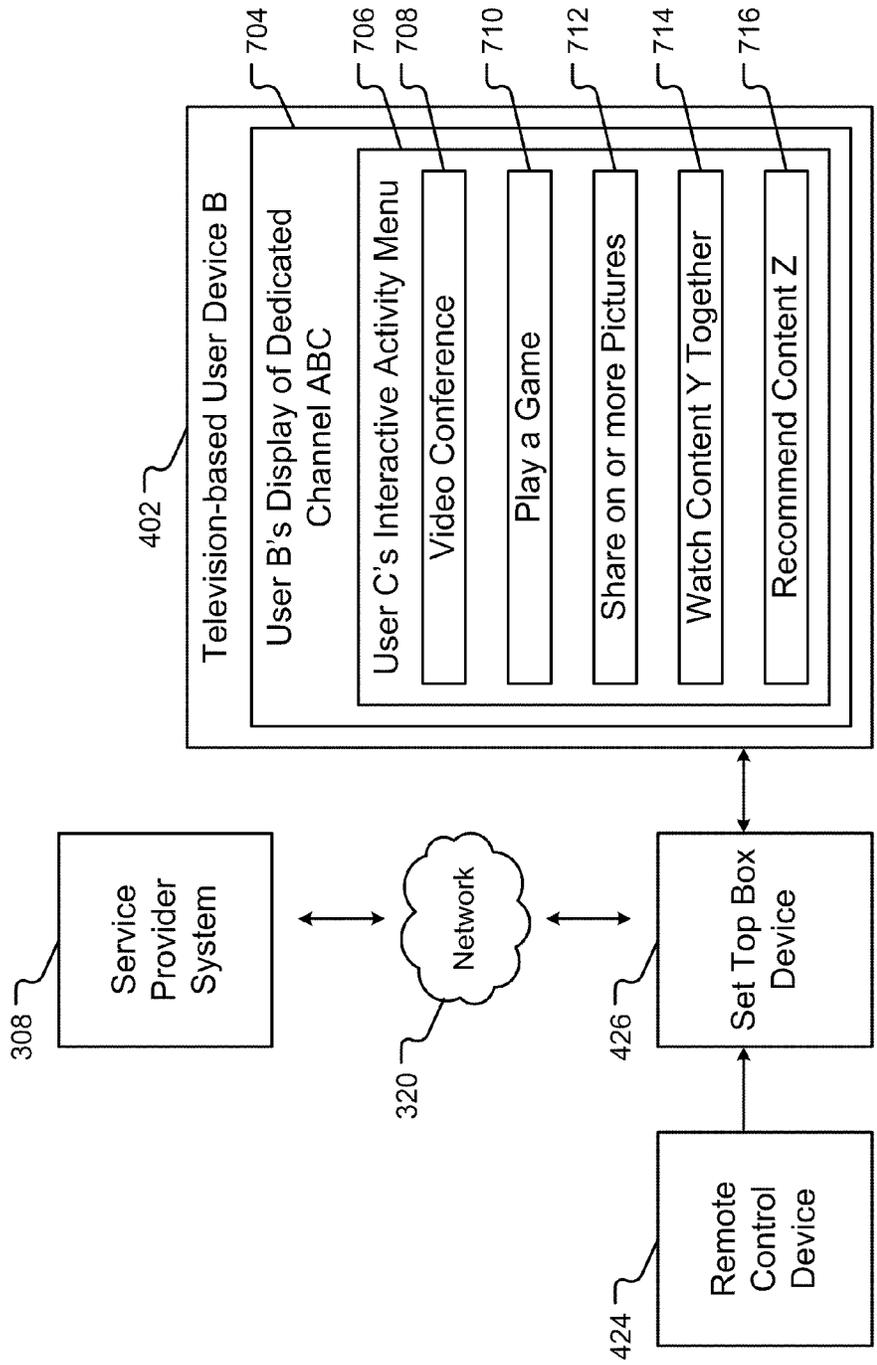


FIG. 7

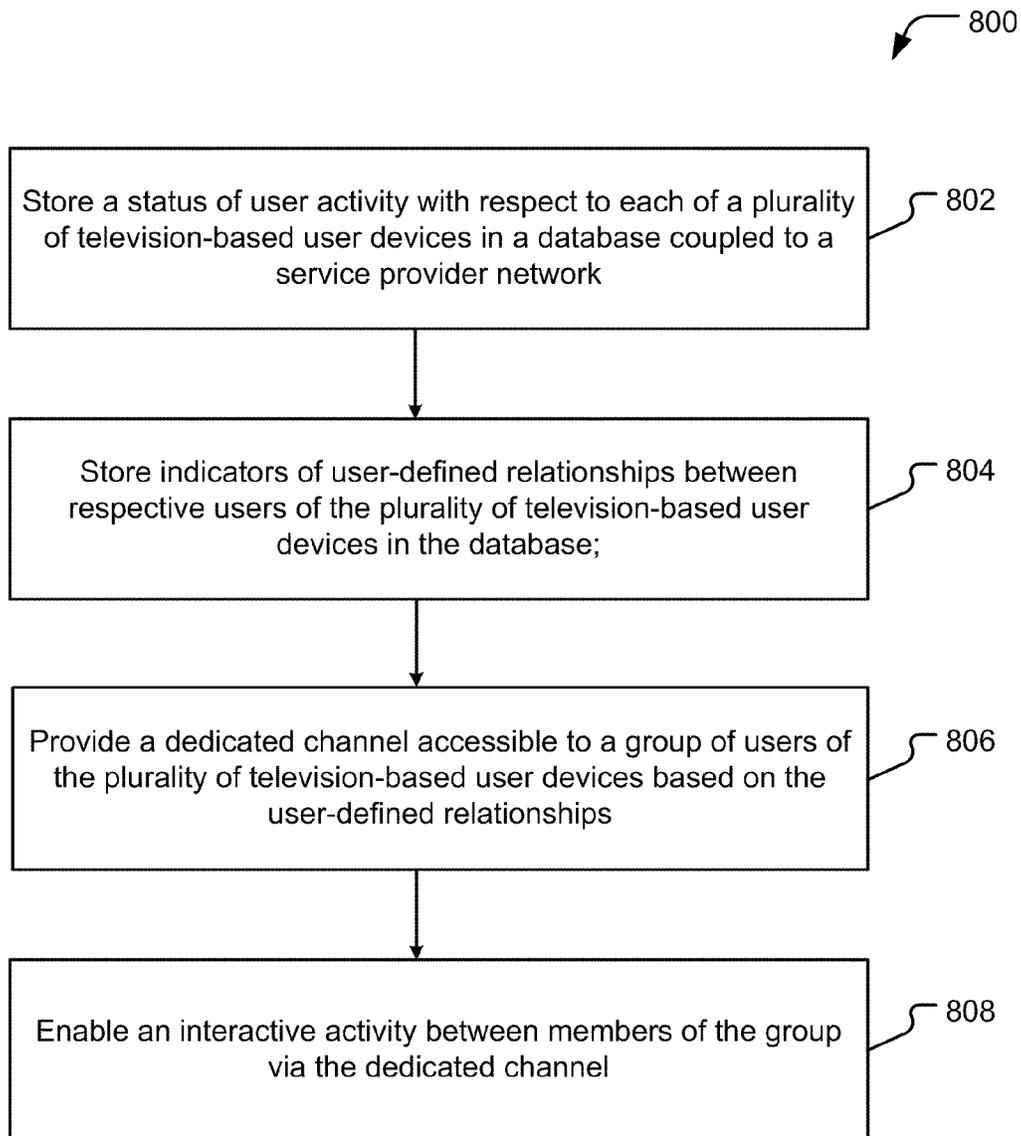


FIG. 8

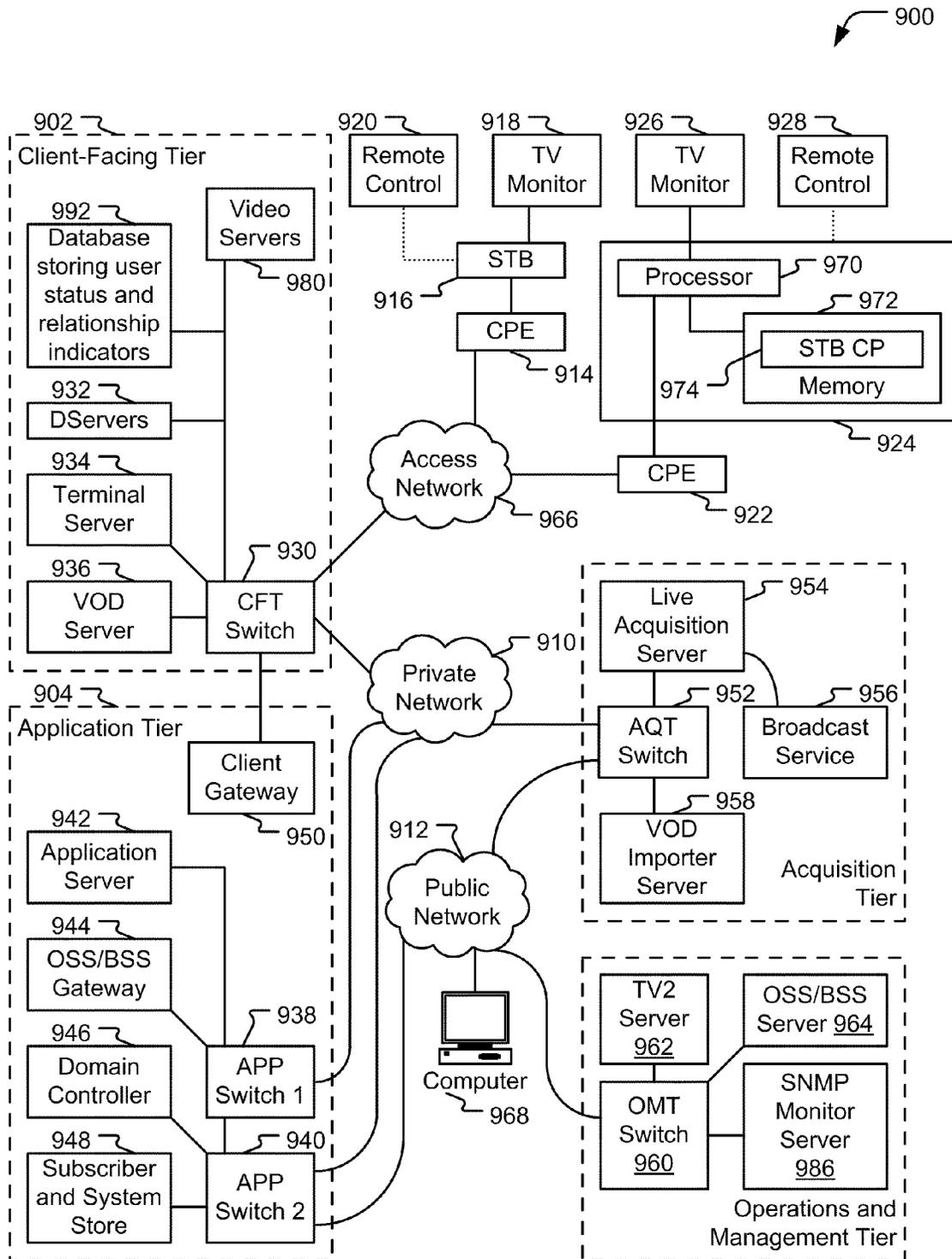


FIG. 9

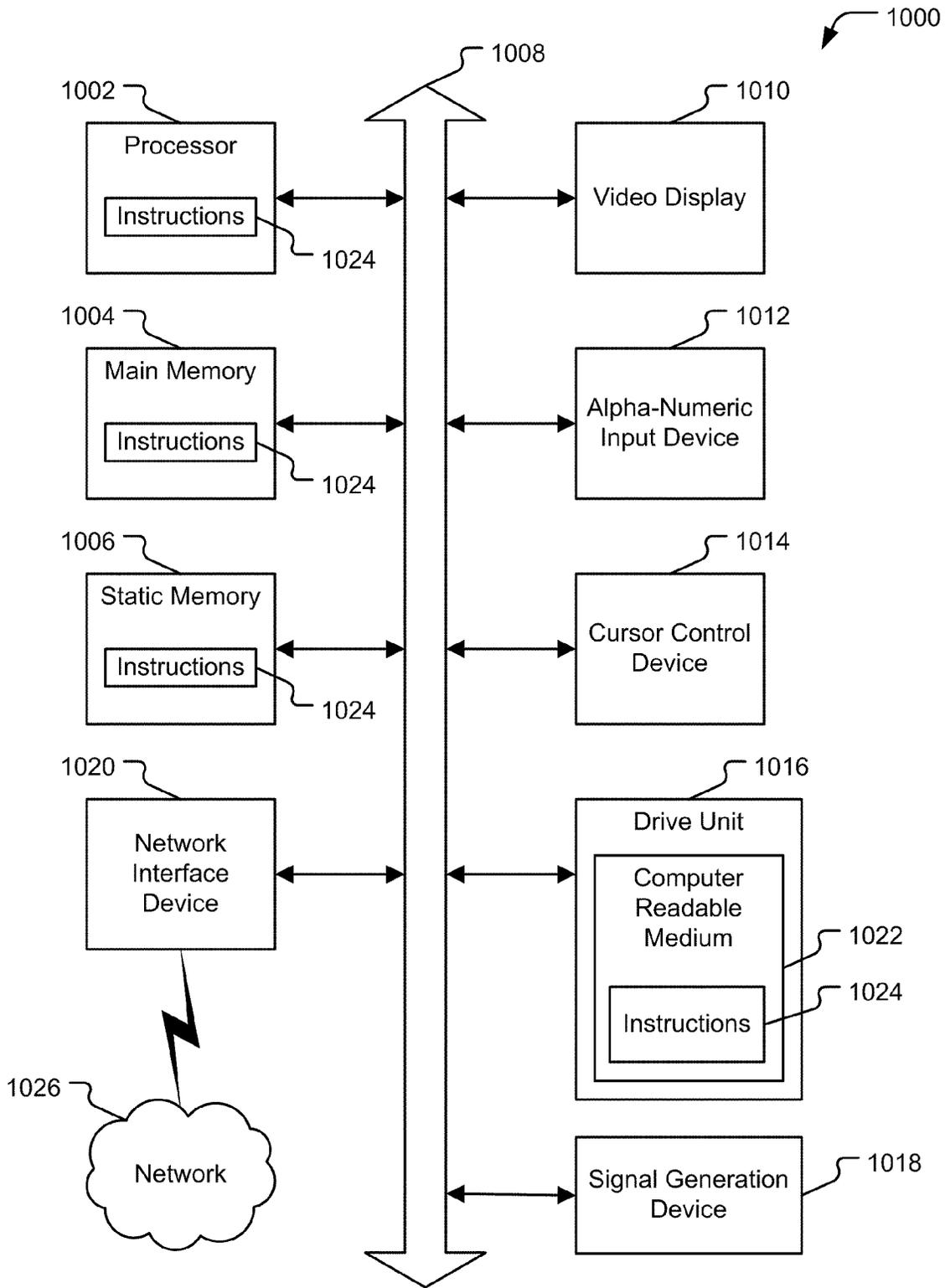


FIG. 10

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PROVIDING A DEDICATED CHANNEL ACCESSIBLE TO A GROUP OF USERS

FIELD OF THE DISCLOSURE

The present disclosure is generally related to providing a dedicated channel accessible to a group of users.

BACKGROUND

A user of a television-based user device communicating with a service provider network, such as an internet protocol television (IPTV) network or a cable television (CATV) network, is typically unaware of the status of user activity of users of other television-based user devices. Members of a group of users of the television-based user devices may be unable to engage in interactive activities with each other by use of their television-based user devices.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram of a first particular embodiment of a system to provide a dedicated channel accessible to a group of users;

FIG. 2 is a block diagram of a second particular embodiment of a system to provide a dedicated channel accessible to a group of users;

FIG. 3 is a block diagram of a third particular embodiment of a system to provide a dedicated channel accessible to a group of users, displaying a status of user activity menu;

FIG. 4 is a block diagram of the third particular embodiment of a system to provide a dedicated channel accessible to a group of users, displaying an invitation to become a member of a user's group;

FIG. 5 is a block diagram of the third particular embodiment of a system to provide a dedicated channel accessible to a group of users, displaying a user's view of a dedicated channel;

FIG. 6 is a block diagram of the third particular embodiment of a system to provide a dedicated channel accessible to a group of users, displaying an invitation to participate in a user's interactive activity;

FIG. 7 is a block diagram of the third particular embodiment of a system to provide a dedicated channel accessible to a group of users, displaying a user's interactive activity menu;

FIG. 8 is a flow diagram of a particular embodiment of a method to provide a dedicated channel accessible to a group of users;

FIG. 9 is a block diagram of an illustrative embodiment of an internet protocol television (IPTV) system; and

FIG. 10 is a block diagram of an illustrative embodiment of a general computer system.

DETAILED DESCRIPTION

The various embodiments disclose a system and method to provide a dedicated channel accessible to a group of users of television-based user devices. Users of the television-based user devices communicating with a service provider network, such as an internet protocol television (IPTV) network or a cable television (CATV) network, are able to monitor the status of user activity of other users of the television-based user devices. A dedicated channel, such as a IPTV/CATV enabled social networking channel, accessible to a group of users of the television-based user devices is provided so that the members of the group of users, such as a IPTV/CATV enabled social networking group, are able to engage in inter-

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active activities with each other such as video conferencing, game playing, picture sharing, watching particular content together, or recommending content to each other.

In a particular embodiment, a system is disclosed that includes a service provider network configured to communicate with a plurality of television-based user devices. The system also includes a database storing a status of user activity with respect to each of the plurality of television-based user devices and storing indicators of user-defined relationships between respective users of the plurality of television-based user devices. The database is coupled to the service provider network. The system further includes a dedicated channel accessible to a group of users of the plurality of television-based user devices based on the user-defined relationships. The dedicated channel is arranged to enable interactive activity between members of the group.

In another particular embodiment, a method is disclosed that includes storing a status of user activity with respect to each of a plurality of television-based user devices in a database coupled to a service provider network. The method also includes storing indicators of user-defined relationships between respective users of the plurality of television-based user devices in the database. The method further includes providing a dedicated channel accessible to a group of users of the plurality of television-based user devices based on the user-defined relationships. The method also includes enabling interactive activity between members of the group via the dedicated channel.

In another particular embodiment, a system is disclosed that includes a service provider network including an internet protocol television (IPTV) network or a cable television network. The system also includes an active database storing a status of user activity with respect to each of a plurality of television-based user devices supported by the service provider network. The active database also stores indicators of user-defined relationships between respective users of the plurality of television-based user devices. The active database is coupled to the service provider network. The system further includes a dedicated user-defined channel accessible to an IPTV/CATV enabled social networking group of users of the plurality of television-based user devices based on the user-defined relationships. The dedicated user-defined channel is arranged to enable interactive activity between members of the IPTV/CATV enabled social networking group.

Referring to FIG. 1, a block diagram of a first particular embodiment of a system to provide a dedicated channel accessible to a group of users of television-based user devices is depicted and generally designated **100**. In the system **100**, a first television-based user device **102**, a second television-based user device **104**, a third television-based user device **106**, and a fourth television-based user device **108** are coupled to a database **112** via a service provider network **110**. The service provider network **110** is configured to communicate with each of the television-based user devices **102**, **104**, **106**, and **108**. In a particular embodiment, the service provider network **110** is an internet protocol television (IPTV) network. In an alternative embodiment, the service provider network **110** is a cable television (CATV) network.

A status of user activity with respect to each of the television-based user devices **102**, **104**, **106**, and **108** is stored in the database **112**. In a particular embodiment, the status of user activity is determined by monitoring a set-top box activity or a channel changing activity. For example, the service provider network **110** may be able to identify which user is using which television-based user device by monitoring the set-top box activity or the channel changing activity of each of the television-based user devices **102**, **104**, **106**, and **108**.

In a particular embodiment, the status of user activity is determined by a user of one of the television-based user devices **102, 104, 106, 108**. For example, the television-based user device **102** may be in Atlanta and the status of user activity may be “inactive,” either because the television is off or because the user in Atlanta has turned on a “privacy” or a “do not disturb” feature. Using the “privacy” or “do not disturb” feature, even if the user in Atlanta is watching the television, the database **112** may show an “unavailable” or an “inactive” type of status of user activity for the user in Atlanta.

A dedicated IPTV/CATV enabled social networking channel, shown as dedicated channel **721** in FIG. 1, is provided to each of the television-based user devices **102, 104, 106, and 108**. For example, the television-based user device **104** may be in St. Louis, the status of user activity may be “active,” and the user may be tuned to the dedicated channel **721**. Similarly, the television-based user device **106** may be in Dallas, the status of user activity may be “active,” and the user may also be tuned to the dedicated channel **721**. Likewise, the television-based user device **108** may be in San Antonio, the status of user activity may be “active,” but the user may not be tuned to the dedicated channel **721**.

The dedicated channel **721** may be arranged to enable an interactive activity between the user in St. Louis and the user in Dallas, for example. When the user in Dallas tunes to the dedicated channel **721**, the user sees who else in the user’s IPTV/CATV enabled social networking group is “active” and tuned in to the dedicated channel **721** (e.g., the user in St. Louis), who else is “active” but not tuned in to the dedicated channel **721** (e.g., the user in San Antonio), and who else is “inactive” (e.g., the user in Atlanta). The user in Dallas may invite the members in the user’s IPTV/CATV enabled social networking group who are “active” and tuned in to the dedicated channel **721** to participate in a IPTV/CATV enabled social networking activity. In the embodiment illustrated in FIG. 1, the user in St. Louis is a member of the IPTV/CATV enabled social networking group tuned in to the dedicated channel **721**. The user in Dallas may invite the user in St. Louis to participate in a video conference, through webcams on the televisions or on the set-top boxes, play games such as chess, bridge, or other games, share a family photo album, watch particular content together, or recommend content to each other, among other alternatives. The dedicated channel **721** is a private IPTV/CATV enabled social networking channel that may be customized for content and for impromptu or planned interactive activities. For example, the dedicated channel **721** may be customized so that every Tuesday night at 7:00 PM CST the users in Dallas, San Antonio, Atlanta, and St. Louis play bridge together via the dedicated channel **721**.

Referring to FIG. 2, a block diagram of a second particular embodiment of a system to provide a dedicated channel accessible to a group of users of television-based user devices is depicted and generally designated **200**. The system **200** includes a first television-based user device A **202**, a second television-based user device B **204**, a third television-based user device C **206**, and a fourth television-based user device D **208** that are each coupled to a service provider network **210**. For example, the service provider network **210** may be an internet protocol television (IPTV) network or a cable television (CATV) network. The service provider network **210** is coupled to an active database **212**.

The active database **212** stores a status of user activity with respect to each of the first television-based user device A **202**, the second television-based user device B **204**, the third television-based user device C **206**, and the fourth television-based user device D **208**. For example, A’s status of user activity **214** may be “active,” B’s status of user activity **216**

may be “active,” C’s status of user activity **218** may be “active,” and D’s status of user activity **220** may be “active.”

The active database **212** also stores indicators of user-defined relationships between respective users of the first television-based user device A **202**, the second television-based user device B **204**, the third television-based user device C **206**, and the fourth television-based user device D **208**. For example, an AB relationship indicator **222** between A and B may be IPTV/CATV enabled social networking group ABC (e.g., “FF ABC”), an AC relationship indicator **224** between A and C may be IPTV/CATV enabled social networking group ABC, an AD relationship indicator **226** between A and D may be “none,” a BC relationship indicator **228** between B and C may be IPTV/CATV enabled social networking group ABC, a BD relationship indicator **230** between B and D may be “none,” and a CD relationship indicator **232** between C and D may be “none.” Based on the user-defined relationships, A, B, and C may be members of a IPTV/CATV enabled social networking group ABC **234**. Based on the user-defined relationships, D may not be a member of the IPTV/CATV enabled social networking group ABC **234**.

As shown in FIGS. 2, A, B, and C each have access to a dedicated user-defined channel ABC **236**, but D does not have access to the dedicated user-defined channel ABC **236**. The dedicated user-defined channel ABC **236** enables A, B, and C to participate in an interactive activity **238**. For example, the interactive activity **238** may include video conferencing, game playing, picture sharing, watching particular content, or recommending content, or any combination thereof. A and C may be able to view B’s photo album of pictures from B’s trip to Ireland, for example, via the dedicated user-defined channel ABC **236**. D may be added by having A, B, or C invite D to join the group.

Referring to FIG. 3, a block diagram of a third particular embodiment of a system to provide a dedicated channel accessible to a group of users of television-based user devices, displaying a status of user activity menu, is depicted and generally designated **300**. The system **300** includes a television-based user device **302** coupled to a set-top box device **306**. The set-top box device **306** is responsive to a remote control device **304**. The set-top box device **306** is coupled to a network **320** (e.g., an IPTV network or a CATV network). The network **320** is coupled to a service provider system **308**. The television-based user device **302** includes a display **310**. The display **310** is shown displaying a status of user activity menu **312**. The status of user activity menu **312** has an “active” indicator **314** and an “inactive” indicator **316**. A user of the television-based user device **302** may determine the status of user activity by choosing either the “active” indicator **314** or the “inactive” indicator **316** from the status of user activity menu **312** using either a button on the remote control device **304** or a button on the set-top box device **306**, for example. By choosing the “inactive” indicator **316** from the status of user activity menu **312**, the user of the television-based user device **302** may turn on a “privacy” or a “do not disturb” feature. Using the “privacy” or “do not disturb” feature, even if the user of the television-based user device **302** is watching the television, the active database **212** of FIG. 2 may show an “inactive” type of status of user activity for the user of the television-based user device **302**.

Using the status of user activity menu **312** is one way of updating the status of user activity in an active database, such as the active database **212** of FIG. 2. The status of user activity of the user of the television-based user device **302** may also be updated automatically, for example, by monitoring the set-top box device **306** activity (e.g., the pressing of a button on

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the set-top box device 306) or the channel changing activity of the remote control device 304.

Referring to FIG. 4, a block diagram of the third particular embodiment of a system to provide a dedicated channel accessible to a group of users of television-based user devices, displaying an invitation to become a member of a user's group, is depicted and generally designated 400. The system 400 includes a television-based user device B 402 coupled to a set-top box device 426. The set-top box device 426 is responsive to a remote control device 424. The set-top box device 426 is coupled to the network 320. The network 320 is coupled to the service provider system 308. The television-based user device B 402 includes user B's display 404. User B's display 404 is shown displaying an invitation 406 to become a member of user A's IPTV/CATV enabled social networking group ABC. The invitation 406 has an "accept" indicator 408, a "decline" indicator 410, and an "ignore" indicator 412. In a particular embodiment, an indicator of a user-defined relationship between A and B, such as the AB relationship indicator 222 of FIG. 2, may be determined by A inviting B to become a member of A's IPTV/CATV enabled social networking group ABC. User B may respond to the invitation 406 by choosing either the "accept" indicator 408, the "decline" indicator 410, or the "ignore" indicator 412 from the invitation 406 using either the remote control device 424 or the set-top box device 426. D could be added by A, B, or C inviting D to become a member of a IPTV/CATV enabled social networking group ABCD. If D accepted an invitation, similar to the invitation 406, the AD relationship indicator 226 of FIG. 2, the BD relationship indicator 230, and the CD relationship indicator 232 would be updated in the active database 212, accordingly.

Referring to FIG. 5, a block diagram of the third particular embodiment of a system to provide a dedicated channel accessible to a group of users of television-based user devices, displaying a user's view of a dedicated channel, is depicted and generally designated 500. The system 500 includes a television-based user device C 502 coupled to a set-top box device 526. The set-top box device 526 is responsive to a remote control device 524. The set-top box device 526 is coupled to the network 320. The network 320 is coupled to the service provider system 308. The television-based user device C 502 includes user C's display 504 of dedicated channel ABC. User C's display 504 is shown displaying an indication 506 that user A is a member of IPTV/CATV enabled social networking group ABC and that user A's status of user activity 508 is "active," an indication 510 that user B is a member of IPTV/CATV enabled social networking group ABC and that user B's status of user activity 512 is "active," and an indication 514 that user D is not a member of IPTV/CATV enabled social networking group ABC and that user D's status of user activity 516 is "active." As described above with reference to FIG. 4, user C could invite user D to become a member of IPTV/CATV enabled social networking group ABCD. Based on the indications 506 and 510, user C may decide to invite one or both of user A and user B to participate in an interactive activity.

Referring to FIG. 6, a block diagram of the third particular embodiment of a system to provide a dedicated channel accessible to a group of users of television-based user devices, displaying an invitation to participate in a user's interactive activity, is depicted and generally designated 600. The system 600 includes a television-based user device A 602 coupled to a set-top box device 626. The set-top box device 626 is responsive to a remote control device 624. The set-top box device 626 is coupled to the network 320. The network 320 is coupled to the service provider system 308. The tele-

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vision-based user device A 602 includes user A's display 604 of dedicated channel ABC. User A's display 604 is shown displaying an invitation 606 to participate in user C's interactive activity. The invitation 606 has an "accept" indicator 608, a "decline" indicator 610, and an "ignore" indicator 612. User A may respond to the invitation 606 by choosing either the "accept" indicator 608, the "decline" indicator 610, or the "ignore" indicator 612 from the invitation 606 using either the remote control device 624 or the set-top box device 626. If user A chooses the "accept" indicator 608, user C may be sent a message informing user C of user A's choice, and user A may be shown a menu of user C's interactive activities, as described more fully below in reference to FIG. 7. If user A chooses either the "decline" indicator 610 or the "ignore" indicator 612, user C may be sent a message informing user C of user A's choice.

In a particular embodiment, a user invites one or more members of the user's group to participate in an interactive activity by sending an invitation to the one or more members of the user's group based on the status of user activity of each of the one or more members of the user's group. For example, user C has invited user A to participate in user C's interactive activity by sending user A the invitation 606, where user A is a member of user C's IPTV/CATV enabled social networking group ABC, as shown by the indication 506 of FIG. 5, and where user A's status of user activity 508 of FIG. 5 is "active." User C may also invite user B to participate in user C's interactive activity by sending the invitation 606 to user B, where user B is also a member of user C's IPTV/CATV enabled social networking group ABC, as shown by the indication 510 of FIG. 5, and where user B's status of user activity 512 of FIG. 5 is also "active."

Referring to FIG. 7, a block diagram of the third particular embodiment of a system to provide a dedicated channel accessible to a group of users of television-based user devices, displaying a user's interactive activity menu, is depicted and generally designated 700. The system 700 includes the television-based user device B 402 coupled to the set-top box device 426. The set-top box device 426 is responsive to the remote control device 424. The set-top box device 426 is coupled to the network 320. The network 320 is coupled to the service provider system 308. The television-based user device B 402 includes user B's display 704 of dedicated channel ABC. User B's display 704 is shown displaying user C's interactive activity menu 706. User C's interactive activity menu 706 has a "video conference" indicator 708, a "play a game" indicator 710, a "share one or more pictures" indicator 712, a "watch content Y together" indicator 714, and a "recommend content Z" indicator 716. User B may respond to user C's interactive activity menu 706 by choosing either the "video conference" indicator 708, the "play a game" indicator 710, the "share one or more pictures" indicator 712, the "watch content Y together" indicator 714, or the "recommend content Z" indicator 716 from user C's interactive activity menu 706 using either the remote control device 424 or the set-top box device 426. User C's interactive activity menu 706 is displayed on user B's display 704 after user B accepts an invitation like the invitation 606 of FIG. 6.

If user B chooses the "video conference" indicator 708, for example, user B's display 704 may show video of user C captured by a webcam at user C's location and may optionally show video of user B in an inset screen captured by a webcam at user B's location. If user B chooses the "play a game" indicator 710, for example, user B's display 704 may show a menu of available games that may be played. If user B chooses the "share one or more pictures" indicator 712, for example, user B's display 704 may show one or more photo

albums containing C's pictures, B's pictures, or any combination thereof. If user B chooses the "watch content Y together" indicator **714**, for example, user B's display **704** may start showing content Y. If user B chooses the "recommend content Z" indicator **716**, for example, user B's display **704** may show a preview of content Z, a review of content Z, or may start showing content Z.

FIG. 8 is a flow diagram of a particular embodiment of a method to provide a dedicated channel accessible to a group of users. The method **800** includes storing a status of user activity with respect to each of a plurality of television-based user devices in a database coupled to a service provider network, at **802**. For example, the active database **212** of FIG. 2 may store a status of user activity with respect to each of the first television-based user device A **202**, the second television-based user device B **204**, the third television-based user device C **206**, and the fourth television-based user device D **208**. A's status of user activity **214** may be "active," B's status of user activity **216** may be "active," C's status of user activity **218** may be "active," and D's status of user activity **220** may be "active," for example. Alternatively, the status of user activity with respect to a television-based user device may be "inactive," either because the television is off, there has been no set-top box device activity or channel changing activity for a certain period of time, or the user has turned on a "privacy" or "do not disturb" feature, as described above with reference to FIG. 3.

In a particular embodiment, the service provider network is an internet protocol television (IPTV) network or a cable television (CATV) network. In a particular embodiment, the status of user activity is determined by monitoring a set-top box activity or a channel changing activity, as described above with reference to FIG. 3. In a particular embodiment, the status of user activity for a particular device of a plurality of television-based user devices is determined by a user of the particular device, as described above with reference to the status of user activity menu **312** of FIG. 3.

The method **800** also includes storing indicators of user-defined relationships between respective users of the plurality of television-based user devices in the database, at **804**. For example, the active database **212** of FIG. 2 may also store indicators of user-defined relationships between respective users of the first television-based user device A **202**, the second television-based user device B **204**, the third television-based user device C **206**, and the fourth television-based user device D **208**. The AB relationship indicator **222** between A and B may be IPTV/CATV enabled social networking group ABC, the AC relationship indicator **224** between A and C may be IPTV/CATV enabled social networking group ABC, the AD relationship indicator **226** between A and D may be "none," the BC relationship indicator **228** between B and C may be IPTV/CATV enabled social networking group ABC, the BD relationship indicator **230** between B and D may be "none," and the CD relationship indicator **232** between C and D may be "none," for example. In a particular embodiment, the indicators of the user-defined relationships are determined by having a user invite one or more other users to become members of the user's group, as described above with reference to the invitation **406** of FIG. 4.

The method **800** further includes providing a dedicated channel accessible to a group of users of the plurality of television-based user devices based on the user-defined relationships, at **806**. For example, as shown in FIGS. 2, A, B, and C each have access to a dedicated user-defined channel ABC **236**, but D does not have access to the dedicated user-defined channel ABC **236**. Based on the user-defined relationships shown in FIG. 2 (e.g., the AB relationship indicator **222**, the

AC relationship indicator **224**, and the BC relationship indicator **228**), A, B, and C may be members of the IPTV/CATV enabled social networking group ABC **234**. Similarly, based on the user-defined relationships shown in FIG. 2 (e.g., the AD relationship indicator **226**, the BD relationship indicator **230**, and the CD relationship indicator **232**), D may not be a member of the IPTV/CATV enabled social networking group ABC **234**.

The method **800** also includes enabling an interactive activity between members of the group via the dedicated channel, at **808**. For example, the dedicated user-defined channel ABC **236** of FIG. 2 enables A, B, and C to participate in the interactive activity **238**. Similarly, the dedicated channel ABC of FIGS. 5-7 enables user C, for example, to check on the status of user activity of user A and user B. The dedicated channel ABC of FIGS. 5-7 also enables user C to invite one or both of user A and user B to participate in an interactive activity chosen from user C's interactive activity menu **706** of FIG. 7, for example.

In a particular embodiment, a user invites one or more members of the user's group to participate in an interactive activity by sending an invitation to the members of the user's group based on the status of user activity of each of the members of the user's group. For example, as described above with reference to FIG. 5, based on the indications **506** and **510**, user C may decide to invite user A and user B to participate in an interactive activity by sending the invitation **606** of FIG. 6 to user A and user B. In a particular embodiment, the members of a group who have received an invitation to participate in an interactive activity have an option to accept the invitation, decline the invitation, or ignore the invitation. For example, as described above with reference to FIG. 6, user A may respond to the invitation **606** by choosing either the "accept" indicator **608**, the "decline" indicator **610**, or the "ignore" indicator **612** from the invitation **606** using either the remote control device **624** or the set-top box device **626**.

In a particular embodiment, the interactive activity includes video conferencing, game playing, picture sharing, watching a particular content together, or recommending content, or any combination thereof. For example, as described above with reference to FIG. 7, user B may respond to user C's interactive activity menu **706** by choosing either the "video conference" indicator **708**, the "play a game" indicator **710**, the "share one or more pictures" indicator **712**, the "watch content Y together" indicator **714**, or the "recommend content Z" indicator **716** from user C's interactive activity menu **706** using either the remote control device **424** of FIG. 4 or the set-top box device **426**.

Referring to FIG. 9, an illustrative embodiment of an Internet Protocol Television (IPTV) system that may be used to share private media content is illustrated and is generally designated **900**. For example, the IPTV system **900** may be the system **100** of FIG. 1, the system **200** of FIG. 2, or the system **300** of FIG. 3. As shown, the system **900** can include a client-facing tier **902**, an application tier **904**, an acquisition tier **906**, and an operations and management tier **908**. Each tier **902**, **904**, **906**, **908** is coupled to a private network **910**; to a public network **912**, such as the Internet; or to both the private network **910** and the public network **912**. For example, the client-facing tier **902** can be coupled to the private network **910**. Further, the application tier **904** can be coupled to the private network **910** and to the public network **912**. The acquisition tier **906** can also be coupled to the private network **910** and to the public network **912**. Additionally, the operations and management tier **908** can be coupled to the public network **912**.

As illustrated in FIG. 9, the various tiers **902**, **904**, **906**, **908** communicate with each other via the private network **910** and the public network **912**. For instance, the client-facing tier **902** can communicate with the application tier **904** and the acquisition tier **906** via the private network **910**. The application tier **904** can communicate with the acquisition tier **906** via the private network **910**. Further, the application tier **904** can communicate with the acquisition tier **906** and the operations and management tier **908** via the public network **912**. Moreover, the acquisition tier **906** can communicate with the operations and management tier **908** via the public network **912**. In a particular embodiment, elements of the application tier **904**, including, but not limited to, a client gateway **950**, can communicate directly with the client-facing tier **902**.

The client-facing tier **902** can communicate with user equipment via an access network **966**, such as an Internet Protocol Television (IPTV) access network. For example, the access network **966** may be the service provider network **110** of FIG. 1, the service provider network **210** of FIG. 2, or the network **320** of FIG. 3. In an illustrative embodiment, customer premises equipment (CPE) **914**, **922** can be coupled to a local switch, router, or other device of the access network **966**. The client-facing tier **902** can communicate with a first representative set-top box device **916** (e.g., the set-top box device **426** of FIG. 4) at a first customer premises (e.g., the user premises **104** in St. Louis of FIG. 1) via the first CPE **914** and with a second representative set-top box device **924** (e.g., the set-top box device **526** of FIG. 5) at a second customer premises (e.g., the user premises **106** in Dallas of FIG. 1) via the second CPE **922**. The CPE **914**, **922** can include routers, local area network devices, modems, such as digital subscriber line (DSL) modems, any other suitable devices for facilitating communication between a set-top box device and the access network **966**, or any combination thereof.

In a particular embodiment, the client-facing tier **902** can be coupled to the CPE **914**, **922** via fiber optic cables. Alternatively, the CPE **914**, **922** can be digital subscriber line (DSL) modems that are coupled to one or more network nodes via twisted pairs, and the client-facing tier **902** can be coupled to the network nodes via fiber-optic cables. Each set-top box device **916**, **924** can process data received via the access network **966**, via an IPTV software platform, such as Microsoft® TV IPTV Edition.

The first set-top box device **916** can be coupled to a first external display device (e.g., user B's display **404** of FIG. 4), such as a first television monitor **918**, and the second set-top box device **924** can be coupled to a second external display device (e.g., user C's display **504** of FIG. 5), such as a second television monitor **926**. The first external display device and the second external display device may display the user interfaces shown in FIGS. 3-7, for example. Moreover, the first set-top box device **916** can communicate with a first remote control **920** (e.g., the remote control device **424** of FIG. 4), and the second set-top box device **924** can communicate with a second remote control **928** (e.g., the remote control device **524** of FIG. 5). The set-top box devices **916**, **924** can include IPTV set-top box devices; video gaming devices or consoles that are adapted to receive IPTV content; personal computers or other computing devices that are adapted to emulate set-top box device functionalities; any other device adapted to receive IPTV content and transmit data to an IPTV system via an access network; or any combination thereof.

In an exemplary, non-limiting embodiment, each set-top box device **916**, **924** can receive data, video, or any combination thereof, from the client-facing tier **902** via the access network **966** and render or display the data, video, or any combination thereof, at the display device **918**, **926** to which

it is coupled. In an illustrative embodiment, the set-top box devices **916**, **924** can include tuners that receive and decode television programming signals or packet streams for transmission to the display devices **918**, **926**. Further, the set-top box devices **916**, **924** can include a STB processor **970** and a STB memory device **972** that is accessible to the STB processor **970**. In one embodiment, a computer program, such as the STB computer program **974**, can be embedded within the STB memory device **972**. In another illustrative embodiment, a user computing device **984**, such as a personal computer, laptop or local server, can be coupled to a set-top box device, such as the second representative set-top box device **924**, for example, via a universal serial bus (USB) connection or other connection.

In an illustrative embodiment, the client-facing tier **902** can include a client-facing tier (CFT) switch **930** that manages communication between the client-facing tier **902** and the access network **966** and between the client-facing tier **902** and the private network **910**. As illustrated, the CFT switch **930** is coupled to one or more data servers, such as D-servers **932**, that store, format, encode, replicate, or otherwise manipulate or prepare video content for communication from the client-facing tier **902** to the set-top box devices **916**, **924**. The CFT switch **930** can also be coupled to a terminal server **934** that provides terminal devices with a connection point to the private network **910**. In a particular embodiment, the CFT switch **930** can be coupled to a video-on-demand (VOD) server **936** that stores or provides VOD content imported by the IPTV system **900**.

Further, the CFT switch **930** is coupled to one or more video servers **980** that receive video content and transmit the content to the set-top boxes **916**, **924** via the access network **966**. In a particular embodiment, the CFT switch **930** can be coupled to one or more publication servers **982** that facilitate the formation of groups that share private content and the inclusion of indicators of such private content with video content received by users in a group.

The CFT switch **930** is coupled to a database **992** storing user status and relationship indicators. The database **992** storing user status and relationship indicators may be an example of the database **112** of FIG. 1 or the active database **212** of FIG. 2.

In an illustrative embodiment, the client-facing tier **902** can communicate with a large number of set-top boxes, such as the representative set-top boxes **916**, **924** over a wide geographic area, such as a regional area, a metropolitan area, a viewing area, a designated market area or any other suitable geographic area, market area, or subscriber or customer group that can be supported by networking the client-facing tier **902** to numerous set-top box devices. In a particular embodiment, the CFT switch **930**, or any portion thereof, can include a multicast router or switch that feeds one or more video streams from a video server to multiple set-top box devices.

As illustrated in FIG. 9, the application tier **904** can communicate with both the private network **910** and the public network **912**. The application tier **904** can include a first application tier (APP) switch **938** and a second APP switch **940**. In a particular embodiment, the first APP switch **938** can be coupled to the second APP switch **940**. The first APP switch **938** can be coupled to an application server **942** and to an OSS/BSS gateway **944**. In a particular embodiment, the application server **942** can provide applications to the set-top box devices **916**, **924** via the access network **966**, which enable the set-top box devices **916**, **924** to provide functions, such as display, messaging, processing of IPTV data and VOD material, etc. In a particular embodiment, the OSS/BSS

gateway **944** includes operation systems and support (OSS) data, as well as billing systems and support (BSS) data. In one embodiment, the OSS/BSS gateway **944** can provide or restrict access to an OSS/BSS server **964** that stores operations and billing systems data.

The second APP switch **940** can be coupled to a domain controller **946** that provides Internet access, for example, to users at their computers **968** via the public network **912**. For example, the domain controller **946** can provide remote Internet access to IPTV account information, e-mail, personalized Internet services, or other online services via the public network **912**. In addition, the second APP switch **940** can be coupled to a subscriber and system store **948** that includes account information, such as account information that is associated with users who access the IPTV system **900** via the private network **910** or the public network **912**. In an illustrative embodiment, the subscriber and system store **948** can store subscriber or customer data and create subscriber or customer profiles that are associated with IP addresses of corresponding set-top box devices **916, 924**.

In a particular embodiment, the application tier **904** can include a client gateway **950** that communicates data directly to the client-facing tier **902**. In this embodiment, the client gateway **950** can be coupled directly to the CFT switch **930**. The client gateway **950** can provide user access to the private network **910** and the tiers coupled thereto. In an illustrative embodiment, the set-top box devices **916, 924** can access the IPTV system **900** via the access network **966**, using information received from the client gateway **950**. User devices can access the client gateway **950** via the access network **966**, and the client gateway **950** can allow such devices to access the private network **910** once the devices are authenticated or verified. Similarly, the client gateway **950** can prevent unauthorized devices, such as hacker computers or stolen set-top box devices from accessing the private network **910**, by denying access to these devices beyond the access network **966**.

For example, when the first representative set-top box device **916** accesses the client-facing tier **902** via the access network **966**, the client gateway **950** can verify subscriber information by communicating with the subscriber and system store **948** via the private network **910**. Further, the client gateway **950** can verify billing information and status by communicating with the OSS/BSS gateway **944** via the private network **910**. In one embodiment, the OSS/BSS gateway **944** can transmit a query via the public network **912** to the OSS/BSS server **964**. After the client gateway **950** confirms subscriber and/or billing information, the client gateway **950** can allow the set-top box device **916** to access IPTV content and VOD content at the client-facing tier **902**. If the client gateway **950** cannot verify subscriber information for the set-top box device **916**, e.g., because it is connected to an unauthorized twisted pair, the client gateway **950** can block transmissions to and from the set-top box device **916** beyond the access network **966**.

As indicated in FIG. 9, the acquisition tier **906** includes an acquisition tier (AQT) switch **952** that communicates with the private network **910**. The AQT switch **952** can also communicate with the operations and management tier **908** via the public network **912**. In a particular embodiment, the AQT switch **952** can be coupled to a live acquisition server **954** that receives or acquires television content, movie content, advertisement content, other video content, or any combination thereof, from a broadcast service **956**, such as a satellite acquisition system or satellite head-end office. In a particular embodiment, the live acquisition server **954** can transmit

content to the AQT switch **952**, and the AQT switch **952** can transmit the content to the CFT switch **930** via the private network **910**.

In an illustrative embodiment, content can be transmitted to the D-servers **932**, where it can be encoded, formatted, stored, replicated, or otherwise manipulated and prepared for communication from the video server(s) **980** to the set-top box devices **916, 924**. The CFT switch **930** can receive content from the video server(s) **980** and communicate the content to the CPE **914, 922** via the access network **966**. The set-top box devices **916, 924** can receive the content via the CPE **914, 922**, and can transmit the content to the television monitors **918, 926**. In an illustrative embodiment, video or audio portions of the content can be streamed to the set-top box devices **916, 924**.

Further, the AQT switch **952** can be coupled to a video-on-demand importer server **958** that receives and stores television or movie content received at the acquisition tier **906** and communicates the stored content to the VOD server **936** at the client-facing tier **902** via the private network **910**. Additionally, at the acquisition tier **906**, the video-on-demand (VOD) importer server **958** can receive content from one or more VOD sources outside the IPTV system **900**, such as movie studios and programmers of non-live content. The VOD importer server **958** can transmit the VOD content to the AQT switch **952**, and the AQT switch **952**, in turn, can communicate the material to the CFT switch **930** via the private network **910**. The VOD content can be stored at one or more servers, such as the VOD server **936**.

When users issue requests for VOD content via the set-top box devices **916, 924**, the requests can be transmitted over the access network **966** to the VOD server **936**, via the CFT switch **930**. Upon receiving such requests, the VOD server **936** can retrieve the requested VOD content and transmit the content to the set-top box devices **916, 924** across the access network **966**, via the CFT switch **930**. The set-top box devices **916, 924** can transmit the VOD content to the television monitors **918, 926**. In an illustrative embodiment, video or audio portions of VOD content can be streamed to the set-top box devices **916, 924**.

FIG. 9 further illustrates that the operations and management tier **908** can include an operations and management tier (OMT) switch **960** that conducts communication between the operations and management tier **908** and the public network **912**. In the embodiment illustrated by FIG. 9, the OMT switch **960** is coupled to a TV2 server **962**. Additionally, the OMT switch **960** can be coupled to an OSS/BSS server **964** and to a simple network management protocol (SNMP) monitor **986** that monitors network devices within or coupled to the IPTV system **900**. In a particular embodiment, the OMT switch **960** can communicate with the AQT switch **952** via the public network **912**.

Referring to FIG. 10, an illustrative embodiment of a general computer system is shown and is designated **1000**. The computer system **1000** includes a set of instructions that can be executed to cause the computer system **1000** to perform any one or more of the methods or computer based functions disclosed herein. The computer system **1000**, or any portion thereof, may operate as a standalone device or may be connected, e.g., using a network, to other computer systems or peripheral devices.

In a networked deployment, the computer system **1000** may operate in the capacity of a set-top box device, a server, or a mobile computing device, such as the television-based user devices **102, 104, 106, and 108** of FIG. 1, the service provider network **110** of FIG. 1, the database **112** of FIG. 1, the television-based user devices **202, 204, 206, and 208** of

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FIG. 2, the service provider network 210 of FIG. 2, the active database 212 of FIG. 2, the set-top box device 306 of FIG. 3, the service provider system 308 of FIG. 3, the network 320 of FIG. 3, and the television-based user devices 302 of FIG. 3, 402 of FIG. 4, 502 of FIG. 5, 602 of FIG. 6, and 402 of FIG. 7. The computer system 1000 can also be implemented as or incorporated into various devices, such as a personal computer (PC), a tablet PC, a personal digital assistant (PDA), a mobile device, a palmtop computer, a laptop computer, a desktop computer, a communications device, a web appliance, or any other machine capable of executing a set of instructions (sequential or otherwise) that specify actions to be taken by that machine. In a particular embodiment, the computer system 1000 can be implemented using electronic devices that provide voice, video or data communication. Further, while a single computer system 1000 is illustrated, the term "system" shall also be taken to include any collection of systems or sub-systems that individually or jointly execute a set, or multiple sets, of instructions to perform one or more computer functions.

As illustrated in FIG. 10, the computer system 1000 may include a processor 1002, e.g., a central processing unit (CPU), a graphics-processing unit (GPU), or both. Moreover, the computer system 1000 can include a main memory 1004 and a static memory 1006 that can communicate with each other via a bus 1008. As shown, the computer system 1000 may further include or be coupled to a video display unit 1010, such as a liquid crystal display (LCD), an organic light emitting diode (OLED), a flat panel display, a cathode ray tube (CRT) display, a solid-state display, or a projection display. Additionally, the computer system 1000 may include an input device 1012, such as a keyboard, a remote control device, and a cursor control device 1014, such as a mouse. The computer system 1000 can also include a disk drive unit 1016, a signal generation device 1018, such as a speaker or remote control device, and a network interface device 1020. The network interface device 1020 may be coupled to other devices (not shown) via a network 1026.

In a particular embodiment, as depicted in FIG. 10, the disk drive unit 1016 may include a computer-readable medium 1022 in which one or more sets of instructions 1024, e.g., software, can be embedded. Further, the instructions 1024 may embody one or more of the methods or logic as described herein. In a particular embodiment, the instructions 1024 may reside completely, or at least partially, within the main memory 1004, the static memory 1006, and/or within the processor 1002 during execution by the computer system 1000. The main memory 1004 and the processor 1002 also may include computer-readable media.

In an alternative embodiment, dedicated hardware implementations, such as application-specific integrated circuits, programmable logic arrays and other hardware devices, can be constructed to implement one or more of the methods described herein. Applications that may include the apparatus and systems of various embodiments can broadly include a variety of electronic and computer systems. One or more embodiments described herein may implement functions using two or more specific interconnected hardware modules or devices with related control and data signals that can be communicated between and through the modules, or as portions of an application-specific integrated circuit. Accordingly, the present system encompasses software, firmware, and hardware implementations.

In accordance with various embodiments of the present disclosure, the methods described herein may be implemented by software programs executable by a computer system. Further, in an exemplary, non-limited embodiment,

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implementations can include distributed processing, component/item distributed processing, and parallel processing. Alternatively, virtual computer system processing can be constructed to implement one or more of the methods or functionalities as described herein.

The present disclosure contemplates a computer-readable medium that includes instructions 1024 or receives and executes instructions 1024 responsive to a propagated signal, so that a device connected to a network 1026 can communicate voice, video, or data over the network 1026. Further, the instructions 1024 may be transmitted or received over the network 1026 via the network interface device 1020.

While the computer-readable medium is shown to be a single medium, the term "computer-readable medium" includes a single medium or multiple media, such as a centralized or distributed database, and/or associated caches and servers that store one or more sets of instructions. The term "computer-readable medium" shall also include any medium that is capable of storing or encoding a set of instructions for execution by a processor or that cause a computer system to perform any one or more of the methods or operations disclosed herein.

In a particular non-limiting, exemplary embodiment, the computer-readable medium can include a solid-state memory such as a memory card or other package that houses one or more non-volatile read-only memories. Further, the computer-readable medium can be a random access memory or other volatile re-writable memory. Additionally, the computer-readable medium can include a magneto-optical or optical medium, such as a disk or tapes or other storage device to capture carrier wave signals such as a signal communicated over a transmission medium. A digital file attachment to an email or other self-contained information archive or set of archives may be considered equivalent to a tangible storage medium. Accordingly, the disclosure is considered to include any one or more of a computer-readable storage medium and other equivalents and successor media, in which data or instructions may be stored.

It should also be noted that software that implements the disclosed methods may optionally be stored on a tangible storage medium, such as: a magnetic medium, such as a disk or tape; a magneto-optical or optical medium, such as a disk; or a solid state medium, such as a memory card or other package that houses one or more read-only (non-volatile) memories, random access memories, or other re-writable (volatile) memories.

Although the present specification describes components and functions that may be implemented in particular embodiments with reference to particular standards and protocols, the invention is not limited to such standards and protocols. For example, standards for Internet, other packet switched network transmission (e.g., TCP/IP, UDP/IP, HTML, and HTTP) and standards for viewing media content (e.g., MPEG, SMPTE, and H.264) represent examples of the state of the art. Such standards are periodically superseded by faster or more efficient equivalents having essentially the same functions. Accordingly, replacement standards and protocols having the same or similar functions as those disclosed herein are considered equivalents thereof.

One or more embodiments of the disclosure may be referred to herein, individually and/or collectively, by the term "invention" merely for convenience and without intending to voluntarily limit the scope of this application to any particular invention or inventive concept. Moreover, although specific embodiments have been illustrated and described herein, it should be appreciated that any subsequent arrangement designed to achieve the same or similar purpose may be

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substituted for the specific embodiments shown. This disclosure is intended to cover any and all subsequent adaptations or variations of various embodiments. Combinations of the above embodiments, and other embodiments not specifically described herein, will be apparent to those of skill in the art upon reviewing the description.

The Abstract of the Disclosure is submitted with the understanding that it will not be used to interpret or limit the scope or meaning of the claims. In addition, in the foregoing Detailed Description, various features may be grouped together or described in a single embodiment for the purpose of streamlining the disclosure. This disclosure is not to be interpreted as reflecting an intention that the claimed embodiments require more features than are expressly recited in each claim. Rather, as the following claims reflect, inventive subject matter may be directed to less than all of the features of any of the disclosed embodiments. Thus, the following claims are incorporated into the Detailed Description, with each claim standing on its own as defining separately claimed subject matter.

The above-disclosed subject matter is to be considered illustrative, and not restrictive, and the appended claims are intended to cover all such modifications, enhancements, and other embodiments, which fall within the scope of the present invention. Thus, to the maximum extent allowed by law, the scope of the present invention is to be determined by the broadest permissible interpretation of the following claims and their equivalents, and shall not be restricted or limited by the foregoing detailed description.

What is claimed is:

1. A system comprising:

a server configured to communicate with a plurality of user devices via an access network; and

a database storing a status of user activity with respect to each of the plurality of user devices and storing indicators of user-defined relationships between the plurality of user devices, wherein a particular status of a particular user device is automatically updated from inactive to active in response to detecting an input at the particular user device;

wherein the server is configured to provide a dedicated television channel that is accessible to a first group of user devices of the plurality of user devices based on the user-defined relationships and that is not accessible to a second group of user devices based on the user-defined relationships;

wherein the first group of user devices includes a first user device and a second user device;

wherein the second group of user devices includes a third user device;

wherein the user-defined relationships include a first relationship between the first user device and the third user device and a second relationship between the second user device and the third user device;

wherein the server is configured to perform a procedure to add the third user device to the first group in response to a signal from the first user device;

wherein adding the third user device to the first group includes updating the first relationship to indicate that the first user device and the third user device are in the first group and updating the second relationship to indicate that the second user device and the third user device are in the first group;

wherein the server is configured to send an interaction invitation to the first user device via the dedicated tele-

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vision channel in response to the server receiving a request to send the interaction invitation from the second user device; and

wherein the server is configured to send an interactivity menu that includes a plurality of interactive options of available interaction types to the first user device via the dedicated television channel in response to received acceptance by the server from the first user device of the interaction invitation.

2. The system of claim 1, wherein the plurality of interactive options includes a video conferencing option, a game playing option, a picture sharing option, a content watching option, a recommendation watching option, or a combination thereof.

3. The system of claim 1, wherein the server is configured to perform the procedure in response to a second signal from the second user device.

4. The system of claim 1, wherein the plurality of user devices includes a set-top box device, a second server, a mobile computing device, a personal computer, a tablet, a personal digital assistant, a first electronic device that provides voice communication, a second electronic device that provides video communication, an electronic device that provides data communication, or any combination thereof.

5. The system of claim 1, wherein the server is configured to send the dedicated television channel to a fourth user device in response to the fourth user device selecting the dedicated television channel if the user-defined relationships indicate that the fourth user device is in the first group, and wherein the server is configured to not send the dedicated television channel to the fourth user device in response to the fourth user device selecting the dedicated television channel if the user-defined relationships indicate that the fourth user device is not in the first group.

6. The system of claim 1, wherein the server is further configured to display the status of user activity with respect to each user device of the first group of user devices via the dedicated television channel.

7. The system of claim 1, wherein the interaction invitation includes a first option to accept the interaction invitation, a second interaction option to decline the invitation, and a third interaction option to ignore the invitation.

8. The system of claim 1, wherein the dedicated television channel is programmable to initiate a weekly interactive game accessible to each user device in the first group of user devices.

9. The system of claim 1, wherein content of the dedicated television channel is customizable based on the interactive options.

10. The system of claim 1, wherein the dedicated television channel is inaccessible to user devices outside of the first group of user devices.

11. The system of claim 1, wherein the dedicated television channel corresponds to a cable television channel.

12. The system of claim 1, wherein the dedicated television channel corresponds to an internet protocol television channel.

13. A method comprising:

storing, by a server, indicators of user-defined relationships between a plurality of user devices to a database;

storing, by the server, a status of user activity with respect to each of the plurality of user devices, wherein a particular status of a particular user device is automatically updated from inactive to active in response to detecting an input at the particular user device;

providing, by the server, a dedicated television channel that is accessible to a first group of user devices of the plu-

rality of user devices based on the user-defined relationships with the server via an access network and that is not accessible to a second group of user devices based on the user-defined relationships, wherein the dedicated television channel is accessible to each user device of the first group of user devices via a common television channel number associated with the dedicated television channel, wherein the first group of user devices includes a first user device and a second user device, wherein the second group of user devices includes a third user device, wherein the user-defined relationships include a first relationship between the first user device and the third user device and a second relationship between the second user device and the third user device;

in response to a signal from the first user device, transmitting a group invitation to the third user device;

in response to receiving acceptance of the group invitation from the third user device, adding, by the server, the third user device to the first group by:

- updating the first relationship to indicate that the first user device and the third user device are in the first group;
- updating the second relationship to indicate that the second user device and the third user device are in the first group;

receiving, at the server from the first user device, a request to send an interaction invitation to the second user device;

sending, from the server, the interaction invitation to the second user device via the dedicated television channel in response to the request;

receive, at the server, acceptance of the interaction invitation from the second user device; and

sending, from the server via the dedicated television channel, an interactivity menu that includes a plurality of interactive options of available interaction types to the second user device in response to the acceptance.

14. The method of claim **13**, wherein the plurality of interactivity options includes a video conferencing option, a game playing option, a picture sharing option, a content watching option, a recommendation watching option, or a combination thereof.

15. The method of claim **14**, further comprising receiving, from the second user device, a selection of an interactivity option of the plurality of interactivity options.

16. The method of claim **15**, further comprising, in response to determining that the selection indicates the video conferencing option, displaying a video from a camera associated with the second user device at the first user device via the dedicated television channel.

17. The method of claim **15**, further comprising, in response to determining that the selection indicates the game playing option, displaying a menu including titles of a plurality of games at the second user device via the dedicated television channel.

18. The method of claim **15**, further comprising, in response to determining that the selection indicates the recommendation watching option, displaying a preview of content recommended by the second user device, a review of the content recommended by the second user device, the content recommended by the second user device, or a combination thereof, at the first user device and at the second user device via the dedicated television channel.

19. A computer-readable storage device comprising instructions executable by a processor to perform operations comprising:

- storing indicators of user-defined relationships between a plurality of user devices in a database, wherein the user devices are coupled via an access network, and wherein the user-defined relationships form groups of user devices;
- storing a status of user activity with respect to each of the plurality of user devices, wherein a particular status of a particular user device is automatically updated from inactive to active in response to detecting an input at the particular user device;
- providing a dedicated channel that is accessible to a social networking group of user devices of the plurality of user devices and that is not accessible to a second group of user devices based on the user-defined relationships, wherein the social networking group is a group of the groups of user devices, wherein the dedicated channel is accessible to each user device of the social networking group via a common channel number associated with the dedicated channel, wherein the social networking group of user devices includes a first user device and a second user device wherein the second group of user devices includes a third user device, wherein the user-defined relationships include a first relationship between the first user device and the third user device and a second relationship between the second user device and the third user device;
- in response to a signal from the first user device, transmitting a group invitation to the third user device;
- in response to receiving acceptance of the group invitation from the third user device, adding the third user device to the social networking group by:
 - updating the first relationship to indicate that the first user device and the third user device are in the social networking group;
 - updating the second relationship to indicate that the second user device and the third user device are in the social networking group;
- receiving a request to send an interaction invitation to the first user device of the social networking group from the second user device of the social networking group;
- sending the interaction invitation to the first user device via the dedicated channel;
- receiving a second acceptance of the interaction invitation from the first user device; and
- sending an interactivity menu that includes a plurality of interactive options of available interaction types to the first user device via the dedicated channel in response to the acceptance,
 - wherein the dedicated channel is available to each user device in the social networking group, and wherein two user devices in the social networking group are in distinct geographic locations.

20. The computer-readable storage device of claim **19**, wherein sending the interaction invitation to the first user device comprises sending a menu to the first user device, and wherein the menu includes an accept option, a decline option, and an ignore option.